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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

LEE, RIP A

ART UNIT PAPER NUMBER

1713

DATE MAILED: 05/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/539,518

Applicant(s)

JACOBSEN ET AL.

Examiner

Rip A. Lee

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 9-15 is/are rejected.
- 7) ☒ Claim(s) 4-8 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>06-17-2005</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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4. Claims 1, 3, and 9-12 are rejected under 35 U.S.C. 102(b) as being anticipated by McDaniel *et al.* (U.S. 6,107,230).

McDaniel *et al.* discloses a supported catalyst system comprising a transition metal complex, a non-aluminxane activator, and treated support. Examples 11 and 13 show use of alumina treated with either H₂SO₄ or CuSO₄ for ethylene polymerization. The non-aluminoxane activator is triethylaluminum.

5. Claims 2 and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over McDaniel *et al.* (U.S. 6,107,230).

The discussion of the disclosures of the prior art from the previous paragraph of this office action is incorporated here by reference. The examples in McDaniel *et al.* do not show use of sulfated silica, however one of ordinary skill in the art would have found it obvious to use silica instead of alumina and thereby arrive at the subject matter of the instant claims because the patent teaches that silica is also used as the support material for catalysts of the invention (col. 12, lines 23-34 discloses preparation of silica). Additionally, there is no showing of use of the cited catalysts for copolymerization of ethylene with alpha olefins in the gas phase, however, it would have been obvious to one having ordinary skill in the art to arrive at such a process from the general disclosure of McDaniel *et al.* because the patent discloses use of catalyst for this purpose (col. 11, lines 17-20), and use of gas phase conditions is disclosed in col. 11, line 9. Since McDaniel *et al.* contemplates such a process, one of ordinary skill in the art would have expected the process to work.

6. Claims 1, 3, 11, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by McDaniel *et al.* (U.S. 6,300,271).

McDaniel *et al.* discloses a supported catalyst system comprising a transition metal complex, a non-aluminxane activator, and treated support. Examples 11-15 show use of alumina treated with either H₂SO₄ or (NH₄)₂SO₄ for ethylene polymerization. The non-aluminoxane activator is triethylaluminum.

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7. Claims 2 and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over McDaniel *et al.*

The discussion of the disclosures of the prior art from the previous paragraph of this office action is incorporated here by reference. The examples in McDaniel *et al.* do not show use of sulfated silica, however one of ordinary skill in the art would have found it obvious to use silica instead of alumina and thereby arrive at the subject matter of the instant claims because the patent teaches that silica is also used as the support material for catalysts of the invention (col. 7, line 60 –col. 8, line 6 discloses preparation of silica). Additionally, there is no showing of use of the cited catalysts for copolymerization of ethylene with alpha olefins in the gas phase, however, it would have been obvious to one having ordinary skill in the art to arrive at such a process from the general disclosure of McDaniel *et al.* because the patent discloses use of catalyst for this purpose (col. 6, lines 54-59), and use of gas phase conditions is disclosed in col. 6, line 46. Since McDaniel *et al.* contemplates such a process, one of ordinary skill in the art would have expected the process to work.

8. Claims 4-8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. None of the cited references discloses use of transition metal complexes having the structures set forth in the instant claims, and neither reference teaches or suggests use of activators disclosed in the instant claims. McDaniel *et al.* (U.S. 6,300,271) expressly avoids use of ionic (borate) activators in their invention.

Prior Art

9. Commentary on "X" references cited in the international search report. EP 1 097 949 (U.S. 6,632,911) and EP 1 241 188 (U.S. 6,677,411) disclose catalysts comprising layered silicate supports that may be treated with sulfate compounds. The instant claims as presented are not anticipated by these references since layered silicate supports do not qualify as inorganic metal oxide, inorganic metal halide, polymeric support. WO 02/66524 (U.S. 6,734,266) discloses catalysts comprising sulfated metal oxide support and aluminosilicate as the activator. The patent does not teach the instant invention because the instant claims require a non-aluminosilicate activator. U.S. 2002/0007023 is the pre-grant publication corresponding to U.S. 6,831,141, which is a divisional of U.S. 6,300,271. The latter has been used in lieu of the cited pre-grant publication.

The prior art made of record but not relied upon is considered pertinent to the Applicant's disclosure. The following references have been cited to show the state of the art with respect to catalyst comprising sulfated metal oxide supports. These catalysts do not incorporate an additional non-aluminosilicate activator component.

Baba *et al.* (U.S. 5,036,035)

Fujie *et al.* (U.S. 5,883,036)

Kuhlmann *et al.* (U.S. 5,182,247)

Dorawala *et al.* (U.S. 4,139,491)


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rip A. Lee whose telephone number is (571)272-1104. The examiner can be reached on Monday through Friday from 9:00 AM - 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached at (571)272-1114. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <<http://pair-direct.uspto.gov>>. Should you have questions on the access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

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May 10, 2006


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